

IN THE SPECIFICATION

Please replace the paragraph beginning at page 2, line 18, with the following replacement paragraph:

In accordance with one aspect of the invention, a memory system having multiple memory banks is configured to prevent bank conflict between access requests. The memory system includes a memory controller and multiple memory banks operatively coupled to the memory controller, with each of the memory banks configured for storing a plurality of data items. More particularly, a given data item is stored as multiple copies of the data item with ~~a given one of the multiple copies~~ being stored in each respective ones of a designated minimum number of the memory banks. The memory controller is adapted to process requests for access to the data items stored in the memory banks in accordance with a specified bank access sequence, e.g., a round-robin sequence in which particular ones of the access requests are selected from head positions of a set of bank queues and applied to corresponding ones of the memory banks.

Please replace the paragraph beginning at page 7, line 6, with the following replacement paragraph:

FIG. 2 illustrates the manner in which multiple copies of data items are stored in a designated minimum number of memory banks in the bank conflict avoidance mode. In this example, each of the banks B0, B1 and ~~B3~~ B2 of the N banks in a given channel stores the same set of K data items, denoted data item 1, data item 2, . . . data item K. Although only three banks are shown in the figure, it is assumed in the illustrative embodiment that the same storage configuration is utilized in both channel 102 and channel 104, such that a total of six banks out of the 2N total number of banks store the same set of data items. Each of the data items in this example corresponds to a particular addressable word of a memory bank. The above-noted input access requests are preferably directed to such addressable words within a particular one of the memory banks.

Please replace the paragraph beginning at page 7, line 6, with the following replacement paragraph:

The above-described embodiments of the invention are intended to be illustrative only. For example, as previously indicated, the present invention can be implemented using other configurations of memory system elements. In addition, the minimum number of memory banks required for storage of multiple copies of a given data item may be determined as another function of the random cycle time of the memory banks, the random bank access delay of the memory banks, or a combination of both. Furthermore, although the illustrative embodiments utilize two independent memory channels, each having data copies stored in a minimum of three memory banks, and with each bank storing the identical data items, it should be appreciated that other numbers of channels, banks per channel and distribution of data copies over the banks may be used. These and numerous other alternative embodiments within the scope of the following claims will be apparent to those skilled in the art.

Please replace the paragraph of the abstract, beginning on page 15, line 2, with the following replacement paragraph:

A memory system having multiple memory banks is configured to prevent bank conflict between access requests. The memory system includes a memory controller and a plurality of memory banks operatively coupled to the memory controller, with each of the memory banks configured for storing a plurality of data items. More particularly, a given data item is stored as multiple copies of the data item with ~~a given one of the multiple copies~~ being stored in ~~each respective ones~~ of a designated minimum number of the memory banks. The memory controller is adapted to process requests for access to the data items stored in the memory banks in accordance with a specified bank access sequence. ~~The minimum number of memory banks for storage of the multiple copies of the given data item may be determined as a function of a random cycle time and a random bank access delay of the memory banks, e.g., as an integer greater than or equal to a ratio of the random cycle time to the random bank access delay. The memory system is preferably operable in the above-described bank conflict avoidance mode as well as a standard random access mode. The memory system is particularly well-suited for use in an application involving an unbalanced ratio of read and write accesses, e.g., as an external tree memory for a network processor integrated circuit, but can also be used in numerous other processing device memory applications.~~